# Indiana Tech Flash

### Indiana's Most Comprehensive Electronic Resource For Engineering & Technology Education.

**Special points of interest:**

- **8 Pages of Resources!**
- **Upcoming Events & Workshops**

**Features inside this issue include:**

**December 2009**

## Vincennes Project Excel

Please contact Robyn Haase

**812-888-4086**

**rhaase@vinu.edu**

for details on how your school and students can participate in **Project Excel**!

**Project Excel** at Vincennes University has recently expanded the courses that can qualify for Dual Credit.

Some of the courses that can participate in dual credit with Vincennes University include…

- Several PLTW "Engineering" Courses...
- Design Processes
- Communication Systems
- Computers in Design & Production
- Manufacturing Processes

## Upcoming Dates & Events

**Warren Robotics "Vex Clean Sweep Qualifying Tournament"** December 5, 2009

**Wheeler High School** Vex Robotics – December 5, 2009

**ETE Ropkey Armor Museum Tour** December 5th at 10 am

**Engineering & Technology Rotunda Day** February 2, 2010

**Annual PLTW Student Conference** February 12, 2010

**World of Wheels Student Career Day** February 12, 2010

**ITEA Conference** March 18-20, 2010

**FIRST Boilermaker Robotics** March 18-20, 2010

**Engineering Expo: Purdue Student Engineering Foundation** March 30, 2010

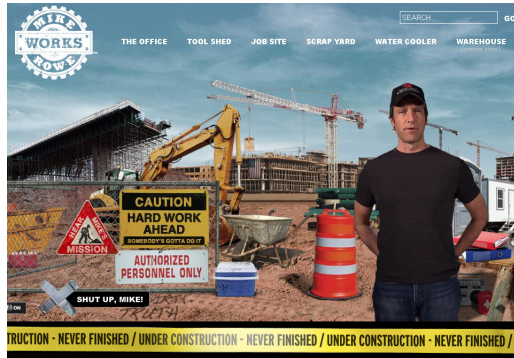**IMSTEA Super Mileage Challenge** April 26, 2010

### PTC Pro/Engineer Academy

**Gain nearly 1 million worth of FREE CAD Software today!**

Welcome to the PTC/ Academy learning portal. Here you will find self directed and self paced tutorials to get you started using your FREE Pro/ ENGINEER Wildfire!

**http:// www.ptcacademy.com/**

### Mike Rowe Works Web Site

"Teaching is the profession that teaches all other professions." That was quipped by some unknown author back in the day. Well, hats off to that author whoever you were. The positive impact of educators should never be underestimated. Right along side our family, teachers set us down the road of our own life journey. They give us the tools to think, to process and to solve. We owe them way more than a shiny red apple. We owe those teachers who made a difference in our lives our thanks and achievement. Fortunately, those two ideas go hand in hand.

**http://www.mikerowe works.com**

### ACE Mentor Program

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Will there be enough architects, construction managers and engineers to fill the industry's needs ten years from now? The ACE Mentor Program of America, Inc. is working hard to make sure there are. ACE is an acronym for architecture, construction, and engineering. The program's mission is to enlighten and increase the awareness of high school students to career opportunities in architecture, construction and engineering and related areas of the design and construction industry through mentoring; and to provide scholarship opportunities for students in an inclusive manner reflective of the diverse school population.

**http:// www.acementor.org/495**

### Blender 3-D design and animation software

Blender is the free open source 3D content creation suite, available for all major operating systems

**http:// www.blender.org/**

### Software Turns Webcam Into 3D Scanner

Probabilistic Feature-based On-line Rapid Model Acquisition, or ProFORMA, software "written by a team headed by Qui Pan, a student at the Department of Engineering at Cambridge University in England" that "turns a regular, cheap webcam into a 3D scanner." The software "lets you rotate any object in front of the camera and it scans it in real time, building a fully 3D texture mapped model as fast as you can turn an object," and afterwards "the camera continues to track the object in space and matches its movement instantly with the on-screen model."

**http://www.wired.com/ gadgetlab/2009/11/ amazing-software-turns- cheap-webcam-into- instant-3d-scanner/**

## Website To Show High School Girls The Appeal Of Engineering

"WGBH with the National Academy of Engineering has launched a program to get more girls interested in engineering through a website called Engineer Your Life. With the President's recent STEM initiative, this web site is exactly what we need to show high school aged girls why engineering is a cool, creative and rewarding career." The new website "gives high school girls a look into the world of engineering by introducing them to women doing great things with engineering."

Giancaspro notes that "there is also a website for Middle School girls called Engineer Girl which has fun facts and design contests with cash prizes."

**http://www.wired.com/ geekdad/2009/11/wgbh- is-helping-girls-discover -the-joy-of-engineering/**



## College of Engineering's INSPIRE program

INSPIRE seeks to build and maintain strong partnerships with educational constituents to grow a vital and consistent platform for research and translation of research results for formal classroom implementation. To ensure impact on a broad scale, INSPIRE is initiating and leading an advocacy effort at state and national levels to inform and influence policy-making that will increase the U.S. commitment to P-12 engineering education.

**https:// engineering.purdue.edu /INSPIRE**

## A World In Motion®

(AWIM) program. The award-winning A World In Motion® program brings science, technology, engineering and mathematics (STEM) to life right in the classroom.

http://www.awim.org/



The award-winning A World In Motion® program brings science, technology, engineering and mathematics (STEM) to life right in the classroom.
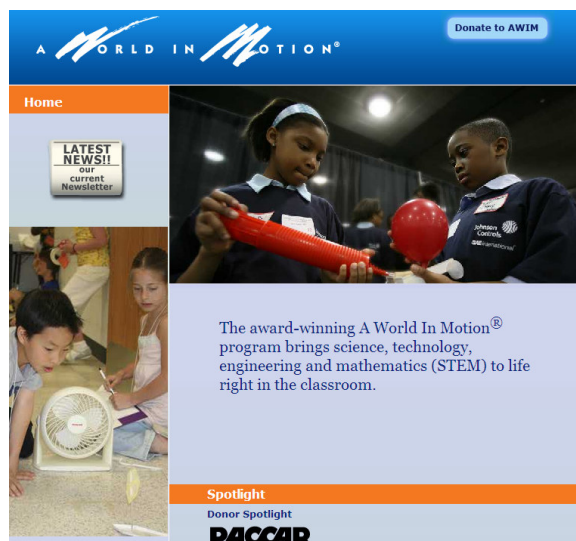


## Federal Perkins "Loan" Cancellations for Teaching in a Designated Subject Shortage Area

This cancellation is based on full-time teaching if there is a shortage of teachers in your subject area. Each year the state education agency determines any subject shortage areas in the elementary and secondary schools within the state.

Check with your local school system or state education agency to find out if your subject matter area has been so designated. If you teach full time in science, mathematics, foreign language, or bilingual education, you qualify for cancellation even if the state has not designated one of these subject areas as a shortage area. the "Teacher Shortage Areas" a nationwide listing by content area.

**http://studentaid.ed.gov/ PORTALSWebApp/ students/english/ cancelperk.jsp**

**PROJECT EXCEL**
VINCENNES UNIVERSITY

VU is committed to broadening the dual credit options available to Indiana students and providing them with opportunities to receive hands-on college experience in career and technical areas. With this in mind, we are pleased to announce that beginning in the Fall of 2009, *Project EXCEL will waive the tuition fee* for students enrolled in dual credit courses in select career and technical areas.

http://www.vinu.edu/cms/opencms/academic_resources/project_excel/

**NASA Announces This Year's Notable Spinoffs.**

"NASA technologies that have recently made their way into the commercial sector include a scheduling system used by hospitals, an object-oriented modeling language for green manufacturing, and microscopic circuits aimed at the 3G cellular market." These were some of the 49 technologies "highlighted" in NASA's annual Spinoff reports.

This year's report "highlights technologies that were originally developed for the Apollo program, in recognition of the fortieth anniversary of the Apollo 11 lunar landing." The article noted NASA has an "archive of more than 1,600 technologies developed by and for NASA" on its Spinoff website.

**http://www.sti.nasa.gov/tto/Spinoff2009/**

(intel) Design and Discovery : Experiencing Engineering Through Design

**Design and Discovery**

*Design and Discovery* is an academic enrichment curriculum that engages students in hands-on engineering and design activities that enhance knowledge, and problem solving skill in the areas of science and engineering.

*Design and Discovery* is most appropriate for informal education settings with extended blocks of time for hands-on activities.

**http://educate.intel.com/en/DesignDiscovery/**

**Order your free copy of the Design Squad Teacher's Guide!**

*Design Squad*, PBS' engineering reality competition series, has a new Teacher's Guide. Order your free copy today! Developed for middle school science and technology teachers, *Design Squad*'s latest guide blends hands-on engineering challenges with 3 core science concepts: Force - students build their own blimps; Electricity - students design electronic games; Sound - students make and play instruments  The challenges use low cost, readily available materials and are linked to national science and technology standards.

**http://pbskids.org/designsquad/engineers/newsletter.html**

Station Spacewalk Game

Play Now!
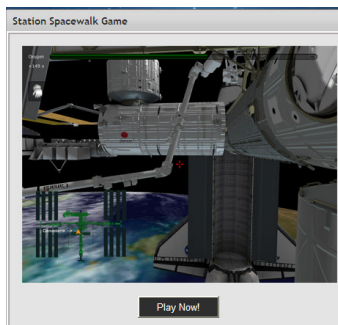
## NASA LAUNCHES FREE VIDEO GAME: STATION SPACEWALK

Imagine the thrill of floating out of the International Space Station and into the emptiness of space and what it would be like to work on the orbiting science laboratory.

NASA has developed a new video game, Station Spacewalk, to give young people an "out of this world" virtual opportunity to experience the thrill of working on a mission to the International Space Station from their computers.

The new video game is based on actual work astronauts performed during the course of several NASA missions.

**http://www.nasa.gov/ multimedia/3d_ resources/ station_spacewalk_ game.html**



**Educational videos are provided to supplement curriculum in Indiana**

Free educational videos are being provided by Comcast and Discovery Education to Indiana students as a supplement to classroom instruction. The Discovery Education On Demand videos -- which cover topics in everything from history to English and math -- are linked to the state's curriculum for all grade levels. The videos and other resources also are available online for free to those who do not have Comcast service.

**http:// comcast.discovery education.com/**
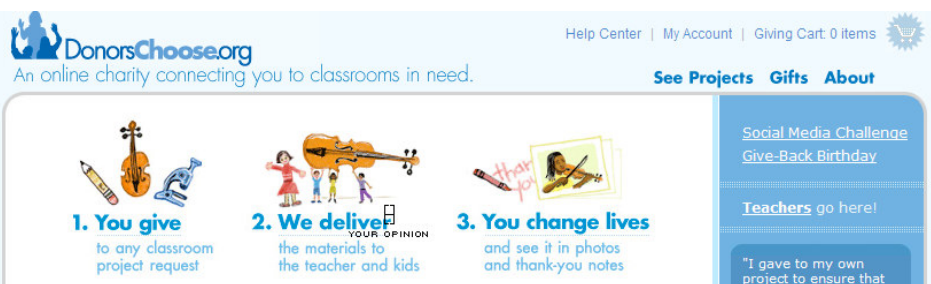


**DonorsChoose.org**

is a simple way to provide students in need with resources that our public schools often lack. At this not-for-profit web site,

teachers submit project proposals for materials or experiences their students need to learn. These ideas become classroom reality when concerned individuals,

whom we call Citizen Philanthropists, choose projects to fund.

**http:// www.donorschoose.org /**


THE FORMULA ONE TECHNOLOGY CHALLENGE
IN SCHOOLS

**The F1 Challenge**
is open to middle and high school level students worldwide. F1 team members learn and work in CAD, CAM, and CNC programs as they perform various activities at each phase of a five-step process to design, analyze, make, test and race a 1/20th scale F1 car. USA teams may face

an elimination event at the state level, in order to qualify for participation in the national challenge, which takes place each year at TSA's national conference. Participation in the USA F1 Challenge involves an annual team fee of $150. This fee covers team registration and all items in the F1 Challenge Kit (F1 rules book, two car kits, free software options, etc.). If you have students who would like to work

together as a F1 team, complete the F1 Challenge Agreement Form and fax or mail it along with the payment to TSA. For more details contact Hillary Lee at 703/860.9000, ext. 16 or at  hlee@tsaweb.org

**www.f1inschools.com**

## INDIANA SUPER MILEAGE CAHLLENGE

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### Indiana Department of Education
#### SUPPORTING STUDENT SUCCESS

## THE VISION

The academic achievement and career preparation of all Indiana students will be the best in the United States and on par with the most competitive countries in the world.

## THE PLAN

1. Create and promote a statewide culture of academic excellence, in which at least:
   a) 90% of students pass both Math and English/Language Arts sections of ISTEP+ and End-of-Course Assessments;
   b) 25% of all graduates receive a score of 3, 4 or 5 on at least one Advanced Placement exam, a 4 or higher on an International Baccalaureate exam, or receive the equivalent of 3 semester hours of college credit during their high school years; and
   c) 90% of students graduate from high school.

- Institute and sustain an emphasis on reading at the elementary level and integrate reading and writing into all content areas to ensure students are able to comprehend and to apply new knowledge across the curriculum and in practical settings.
- Advance learning in the Science, Technology, Engineering and Mathematics (STEM) areas.
- Drive college preparedness by designing and implementing a coherent Advanced Placement (AP) course strategy, including a focus on AP readiness at the middle school level and an aggressive dual-credit strategy.
- Focus on middle school success by ensuring an engaging learning environment that demands academic rigor, begins career preparation awareness and builds upon elementary achievement in basic skills.
- Integrate Title I, English Language Learners (ELL), High Ability and Special Education programs seamlessly into the learning environment by focusing on meeting the needs of the child and complementing the learning experience.
- Create multiple pathways for learning that enable all students to attain postsecondary success.
- Create a vibrant statewide Career and Technical Education that integrate rigorous academic standards, prepare students state of the art Programs of Study that integrate rigorous academic standards, prepare students

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### See the NEW IDOE Vision and Plan at:
### http://www.doe.in.gov/actionplan/index.html